

**COMMONWEALTH OF VIRGINIA**  
**Department of Environmental Quality**  
**Southwest Regional Office**

**STATEMENT OF LEGAL AND FACTUAL BASIS**

Wolf Hills Energy, LLC  
14555 Industrial Park Road, Washington County, Virginia  
Permit No. SWRO11348

In accordance with the Air Pollution Control Law of Virginia §10.1-1308 and §10.1-1322, the Environmental Protection Agency (EPA) Final Full Approval of the Operating Permits Program (Titles IV and V) published in the Federal Register December 4, 2001, Volume 66, Number 233, Rules and Regulations, Pages 62961-62967 and effective November 30, 2001, and Title 40, the Code of Federal Regulations §§72.1 through 76.16, the Commonwealth of Virginia Department of Environmental Quality issues this permit pursuant to 9 VAC 5 Chapter 80, Article 3 of the Virginia Regulations for the Control and Abatement of Air Pollution (Acid Rain Operating Permits).

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. The facility is also subject to the acid rain regulations at 9 VAC 5-80-360 through 9 VAC 5-80-680. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Wolf Hills Energy, LLC has applied for a significant modification of the Title V Operating Permit for its peaking power plant. The Department has reviewed the application and prepared an Article 3 Federal Operating Permit.

Engineer/Permit Contact: \_\_\_\_\_

Date: March 5, 2007

Air Permit Manager: \_\_\_\_\_

Date: March 5, 2007

Deputy Regional Director: \_\_\_\_\_

Date: March 5, 2007

## **FACILITY INFORMATION**

### Permittee

Wolf Hills Energy, LLC  
1044 North 115<sup>th</sup> Street, Suite 400  
Omaha, NE 68154-4446

### Facility

Wolf Hills Energy, LLC  
14555 Industrial Park Road  
Bristol, VA 24202

County-Plant Identification Number: 51-191-0180

## **SOURCE DESCRIPTION**

NAICS Code: 221112 – Fossil Fuel Electric Power Generation

Wolf Hills Energy is a peaking electric power generation facility. It consists of five Pratt & Whitney FT8 Twin Pac simple cycle gas turbine generator sets, with each generator set powered by two gas turbines using natural gas exclusively as a fuel. Each Twin Pac has a maximum heat input of 520.5 MMBtu/hr, with a rated base load of 57.3 MW output. The facility also includes a natural gas-fired heater with a maximum heat input of 11.9 MMBtu/hr heat input.

Air emissions from the facility include Particulate Matter (PM, includes PM-10), Volatile Organic Compounds (VOC), Nitrogen Oxides (NO<sub>x</sub>), Sulfur Dioxide (SO<sub>2</sub>), and Carbon Monoxide (CO) from the combustion turbines and natural gas heater, and trace amounts of Hazardous Air Pollutants (HAP) from the combustion turbines.

The facility began operation in 2001 and is considered a Title V major source because potential emissions of NO<sub>x</sub> and CO are above the major source threshold. This facility is located in an attainment area for all pollutants. The facility is currently permitted under a state major New Source Review (NSR) permit issued on August 27, 2001 (as amended September 18, 2006) and a Title V operating permit with an expiration date of January 1, 2009.

The permittee has applied to incorporate applicable requirements from the amended NSR permit affecting a case-by-case determination pertaining to the annual average limit on sulfur content of the pipeline natural gas fuel for the turbine engines and heater and resultant sulfur dioxide emission limits. In accordance with 9 VAC 5-80-590 A.2., a significant modification to the permit is required. Administrative amendments to the permit include changes in ownership, address, responsible official and representatives for the Acid Rain and NO<sub>x</sub> Budget Trading Programs.

## **COMPLIANCE STATUS**

A full compliance evaluation of this facility, including a site visit, was completed on September 12, 2006. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

## EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device (PCD) Description	PCD ID	Pollutant(s) Controlled
WHO1	1a	Pratt & Whitney FT8 Twin Pac #1a gas turbine	260.25 MMBtu/hr	Water injection Oxidation catalyst	CD-1 CD-11	NO <sub>x</sub> CO
WHO2	1b	Pratt & Whitney FT8 Twin Pac #1b gas turbine	260.25 MMBtu/hr	Water injection Oxidation catalyst	CD-2 CD-12	NO <sub>x</sub> CO
WHO3	2a	Pratt & Whitney FT8 Twin Pac #2a gas turbine	260.25 MMBtu/hr	Water injection Oxidation catalyst	CD-3 CD-13	NO <sub>x</sub> CO
WHO4	2b	Pratt & Whitney FT8 Twin Pac #2b gas turbine	260.25 MMBtu/hr	Water injection Oxidation catalyst	CD-4 CD-14	NO <sub>x</sub> CO
WHO5	3a	Pratt & Whitney FT8 Twin Pac #3a gas turbine	260.25 MMBtu/hr	Water injection Oxidation catalyst	CD-5 CD-15	NO <sub>x</sub> CO
WHO6	3b	Pratt & Whitney FT8 Twin Pac #3b gas turbine	260.25 MMBtu/hr	Water injection Oxidation catalyst	CD-6 CD-16	NO <sub>x</sub> CO
WHO7	4a	Pratt & Whitney FT8 Twin Pac #4a gas turbine	260.25 MMBtu/hr	Water injection Oxidation catalyst	CD-7 CD-17	NO <sub>x</sub> CO
WHO8	4b	Pratt & Whitney FT8 Twin Pac #4b gas turbine	260.25 MMBtu/hr	Water injection Oxidation catalyst	CD-8 CD-18	NO <sub>x</sub> CO
WHO9	5a	Pratt & Whitney FT8 Twin Pac #4a gas turbine	260.25 MMBtu/hr	Water injection Oxidation catalyst	CD-9 CD-19	NO <sub>x</sub> CO
WH10	5b	Pratt & Whitney FT8 Twin Pac #4b gas turbine	260.25 MMBtu/hr	Water injection Oxidation catalyst	CD-10 CD-20	NO <sub>x</sub> CO
WH-HTR		Natural gas-fired heater	11.9 MMBtu/hr	None	N/A	N/A

## EMISSIONS INVENTORY

A copy of the 2005 Emission Statement is attached. Emissions are summarized in the following table:

2005 Actual Emissions	Criteria Pollutant Emission in Tons/Year				
	VOC	CO	SO <sub>2</sub>	PM-10	NO <sub>x</sub>
Total	0.6	4.4	0.3	9.8	45.5

## EMISSION UNIT APPLICABLE REQUIREMENTS INVOLVING SIGNIFICANT MODIFICATION

### **Combustion Turbines (WHO1 – WH10) and Natural Gas-Fired Heater (WH-HTR)**

#### **Limitations**

The following are new applicable requirements contained in conditions from the state major NSR permit issued on August 27, 2001 (as amended September 18, 2006):

The annual average sulfur content limit of the natural gas fuel as contained in Condition 4 of the NSR permit increased from 0.064 grains per 100 dry standard cubic feet per year to 0.3 grains per 100 dry standard cubic feet per year. This new requirement affects Condition III.A.3 of the current Title V permit.

Sulfur dioxide emission limits are added to emission limits contained in Condition 14 of the NSR permit. Sulfur dioxide emissions from the operation of the ten (10) combustion turbines shall not exceed the limits specified below (combined total includes the natural gas-fired heater):

	(each at base/peak load)	(combined total)
	lb/hr	tons/yr
Sulfur Dioxide	0.27	2.0

This new requirement affects Condition III.A.8 of the current Title V permit.

#### **Monitoring, Recordkeeping, Testing and Reporting**

Since there are no add-on control devices for sulfur dioxide emissions from the units and uncontrolled emissions of sulfur dioxide are below major source levels, the provisions of 40 CFR

Part 64, Compliance Assurance Monitoring do not apply to the emissions units in consideration of sulfur dioxide emissions resulting from the modification.

Monitoring, recordkeeping, testing and reporting requirements reflected in the current Title V permit have not changed as a result of the modification.

## **ADMINISTRATIVE CHANGES**

The permittee has requested the following administrative changes:

Remove reference to Constellation Energy Group under the permittee name on the cover page of the permit.

Change the permittee address to 1044 North 115<sup>th</sup> Street, Suite 400, Omaha, NE 68154-4446.

Change the responsible official to Michael C. Lebens.

Change the authorized account representative for the NO<sub>x</sub> Budget Trading Program to Michael C. Lebens, AAR ID Number 797.

Change the designated representative for the Acid Rain Trading Program to Michael C. Lebens, AAR ID Number 797.

## **GENERAL CONDITIONS**

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal operating permit sources. The acid rain operating permit regulations subsume the Title V operating permit regulations for an acid rain facility. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

### **Comments on General Conditions**

#### **B. Permit Expiration**

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §§2.1-20.01:2 and §§10.1-1185 of the *Code of Virginia*, and the “Department of Environmental Quality Agency Policy Statement No. 2-2003”.

#### **F. Failure/Malfunction Reporting**

Section 9 VAC 5-20-180 requires malfunction and excesses emissions reporting within 4 hours of discovery. Section 9 VAC 5-80-650 also requires malfunction reporting; however, reporting is required within 2 days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to this section including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations and 9 VAC 5-80-650 is from the acid rain operating permit regulations. This facility is subject to both 9 VAC 5-20-180 and 9 VAC 5-80-650. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-650. The report must be made within 4 daytime business hours of discovery of the malfunction.

#### **U. Malfunction as an Affirmative Defense**

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in section 9 VAC 5-80-650 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on General Condition F.

#### **PUBLIC PARTICIPATION**

A public notice regarding the draft permit was published in the *Washington County News* in Abingdon, Virginia on December 13, 2006. Copies of the draft permit and public notice were sent to the EPA by electronic mail on December 7, 2006. A copy of the public notice was sent to each of the affected states, including West Virginia, Kentucky, North Carolina and Tennessee by postal mail on December 7, 2006. A copy of the public notice was sent to all persons on the Title V mailing list by postal mail or electronic mail no later than December 13, 2006.

Public comments were accepted from December 14, 2006, through January 12, 2007. No comments were received from the public, affected states or the EPA regarding the draft permit.